

c.) **Amendments to the Claims.**

Please amend claims 1-19 and 21-50, all without prejudice or disclaimer of the subject matter thereof, as follows:

Claim 1. (currently amended) Composition comprising agents obtained by the conversion of biomasses of lipid-containing A composition comprising:

a biomass containing a lipid component, wherein the biomass is obtained from an unextracted suspension of one or more marine microorganisms selected from the group consisting of microalgae, macroalgae, marine fungi, cyanobacteria, or and marine bacteria into lipid-containing, and wherein:

the biomass is in a form of microparticles and/or or nanoparticles; and  
the microparticles or nanoparticles of the biomass contain a pharmaceutical or cosmetic activity and said activity is non-bactericidal.

Claim 2. (currently amended) Composition according to The composition of claim 1, wherein said microparticles and/or or nanoparticles have a mean diameter of 10 nm - 10  $\mu$ m.

Claim 3. (currently amended) Composition according to The composition of claim 1 or 2, further comprising one or more pharmaceutical or cosmetic additional pharmaceutically or cosmetically active substances.

Claim 4. (currently amended) Composition according to claim 1 or 2, further comprising The composition of claim 3, wherein the one or more additional pharmaceutically or cosmetically active substances are selected from the group consisting of mineral substances, and/or radical scavengers, and/or dietary supplements, and/or and vitamins.

Claim 5. (currently amended) Composition according to claim 1 or 2, further comprising one or more clay minerals (phyllosilicates) The composition of claim 3, wherein the unextracted biomass and the one or more additional pharmaceutically or cosmetically active substances are heated to the temperature at or above the melting temperature of the lipid component and mixed.

Claim 6. (currently amended) Composition according to The composition of claim 3, wherein said one or more active substances comprise are selected from the group consisting of xanthones, xanthone derivatives, ubiquinones with a chain length of form 1 to 15, inorganic thiocyanates, hydrothiocyanates of organic bases, trihydroxybenzaldehyde, trihydroxybenzaldehyde derivatives, DNA, norlichexanthone, dispersion-stabilizing substances, and combinations thereof

- a) Xanthones or their derivatives and/or
- b) Ubiquinones with a chain length of  $n=1$  to  $n=15$  and/or
- c) Inorganic thiocyanates and/or
- d) Hydrothiocyanates of organic bases and/or
- e) Trihydroxybenzaldehyde or its derivatives and/or
- f) DNA.

Claim 7. (currently amended) Composition according to The composition of claim 1 or 2, further comprising norlichexanthone wherein:

the biomass is heated to a temperature at or above the melting temperature of the lipid component and, prior to homogenization, mixed with an aqueous solution of an emulsifying agent at about the same temperature; or

the biomass is mixed with a solvent at room temperature to form a suspension and the solvent is removed prior to homogenization; or

the biomass is mixed with a solvent and an aqueous solution of an emulsifying agent at room temperature, and the solvent is removed after homogenization.

Claim 8. (currently amended) Composition according to The composition of claim 1 or 2, further comprising one or more dispersion-stabilizing substances.

Claim 9. (currently amended) Composition according to The composition of claim 1 or 2, wherein said lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria comprise the biomass comprises:

microalgae or macroalgae selected from the group consisting of the genera Asparagopsis, Cystoseira, Codium, Dictyota, Dictyopteris, Enteromorpha, Fucus, Gelidium, Gracilaria, Gracilariaopsis, Halopteris, Hypoglossum, Laurencia, Plocamium, Polyneura,

Sargassum, Solieria, Ulva, Thraustochytrids, Schizochytrium, Thraustochytrids, and Thraustochytrium; or  
cyanobacteria selected from the group consisting of the classes Oscillatoriaceae,  
Nostocales, Chroococcales, and Stigonematales; or  
marine bacteria selected from the group consisting of the genera Photobacterium,  
Shewanella, and Colwellia

a) cyanobacteria from the class Oscillatoriaceae, and/or  
b) cyanobacteria from the class Nostocales, and/or  
c) cyanobacteria from the class Chroococcales, and/or  
d) cyanobacteria from the class Stigonematales and/or  
e) macroalgae from the genera Asparagopsis, Cystoseira, Codium, Dictyota,  
Dictyopteris, Enteromorpha, Fucus, Gelidium, Gracilaria,  
Gracilariaopsis, Halopteris, Hypoglossum, Laurencia, Plocamium,  
Polyneura, Sargassum, Solieria, and/or Ulva and/or  
f) Thraustochytrids from the genera Schizochytrium and/or Thraustochytrium  
and/or  
g) Marine bacteria from the genera Photobacterium, Shewanella and/or  
Colwellia.

Claim 10. (currently amended) Composition according to The composition of claim 1 or 2, wherein said lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria are cultivated the pharmaceutical or cosmetic activity of the microparticles or nanoparticles of the biomass include preventing binding of pathogenic microorganisms to a surface.

Claim 11. (currently amended) Method for the production of the composition according to claim 1 or 2, comprising converting biomasses of lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria by homogenisation or emulsification into microparticles or nanoparticles with a diameter of 10 nm – 10 µm A method for producing a pharmaceutical composition comprising:

cultivating a marine microorganism selected from the group consisting of microalgae, macroalgae, marine fungi, cyanobacteria, marine bacteria, and combinations thereof;

forming a suspension of the cultivated marine microorganism that contains a lipid component; and

homogenizing the suspension to form particles with a mean diameter of 10 nm - 10  $\mu$ m wherein the particles contain a pharmaceutical activity and said activity is non-bactericidal.

Claim 12. (currently amended) Method according to The method of claim 11, wherein said converting comprises:

heating the microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria to liquefy fatty acids contained therein;

optionally adding one or more active substances or additives to said microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria, to thereby obtain modified microorganisms;

combining the microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria or the modified microorganisms with a surfactant water mixture heated to a temperature above the fatty acids' melting points, to obtain a combination;

preparing a pre-suspension of said combination, and comprising conducting high-pressure homogenization of said pre-suspension in

homogenizing comprises subjecting the suspension to one or more high-pressure homogenization cycles.

Claim 13. (currently amended) Method according to The method of claim 11, wherein said converting comprises:

forming modified microorganisms by

further comprising adding one or more active substances to the suspension or additives to said microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria for adsorption at room temperature, or

by dispersing said one or more active substances or additives in water and adding said dispersed one or more active substances or additives to said microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria,

combining the modified microorganisms with a surfactant water mixture to obtain a combination;

preparing a pre-suspension of said combination, and-  
conducting high pressure homogenization of said pre-suspension in one or more  
homogenization cycles.

Claim 14. (currently amended) Method according to The method of claim 11, wherein said-converting comprises:

suspending the microalgae, macroalgae, marine fungi, cyanobacteria, or marine-bacteria and optionally additives in an organic solvent to form a suspension, pre-dispersing-the suspension to obtain a pre-dispersion;

conducting high pressure homogenization on said pre-dispersion to obtain-homogenized product and then conducting

further comprising spray-drying or lyophilization of said homogenized product to-obtain spray dried or lyophilized product;

dispersing said spray dried or lyophilized product in lyophilizing the particles with an aqueous surfactant solution to form a dispersion

dispersing said dispersion to form a second dispersion and conducting high pressure-homogenization of said second dispersion in one or more homogenization cycles.

Claim 15. (currently amended) Method according to The method of claim 11, wherein said-converting comprise further comprising:

heating the suspension to a temperature at or above the melting temperature of the  
lipid component prior to homogenization; or

forming an emulsion of water and said biomass and optionally additives, suspension  
followed by dissolving the emulsion in an organic solvent to obtain a dissolved emulsion, adding a water-soluble co-surfactant to said dissolved emulsion to form a modified dissolved emulsion, and pre-dispersing said modified dissolved emulsion to form a pre-dispersion, wherein homogenization comprises conducting high pressure homogenization on said pre-dispersion to form homogenized product and removing the solvent from said homogenized product.

Claim 16. (currently amended) **Method A** method of using biomasses of unextracted lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria as a carrier for active substances, comprising adding said active substances to said biomasses.

Claim 17. (currently amended) **Method A** method of using the composition according to claim 1 as a pharmaceutically or cosmetically active agent, comprising applying said composition as a pharmaceutical or cosmetic, said microparticles or nanoparticles optionally containing wherein a pharmaceutical or a cosmetic agent is added to the particles.

Claim 18. (currently amended) **Method A** method of using the composition according to claim 1 as a foodstuff additive, the method comprising adding said composition to a foodstuff.

Claim 19. (currently amended) **Method A** method of using the composition according to claim 1 for the production of cosmetics or pharmaceuticals or foodstuffs, the method comprising mixing said composition with cosmetics, pharmaceuticals, or foodstuffs.

Claim 20. (cancelled).

Claim 21. (currently amended) **Method A** method of using the composition according to claim 1 for gene transfer, comprising mixing genes for transfer with said microparticles or nanoparticles particles.

Claim 22. (currently amended) **Method A** method of using the composition according to claim 1 for preventing binding of nosocomially important air-spread germs to receptors on skin or tissues and/or or for preventing growth of said germs on the skin or tissues comprising applying said composition to the skin or tissues.

Claim 23. (currently amended) **Method A** method of using the composition according to claim 1 for the improvement of the natural barrier function of the skin and/or or for modifying the skin milieu, comprising applying said composition to skin.

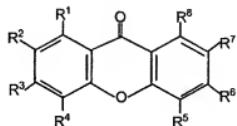
Claim 24. (currently amended) **Method A** method of using the composition according to claim 1 for the prophylaxis of nosocomial infections, comprising applying said composition to regions vulnerable to nosocomial infections.

Claim 25. (currently amended) **Method A** method of using the composition according to claim 1 for inhibiting multiresistant *Staphylococcus aureus* strains, comprising applying said composition to skin or tissues vulnerable to multiresistant *Staphylococcus aureus* strains or exposing multiresistant *Staphylococcus aureus* strains to said composition.

Claim 26. (currently amended) **Method A** method of using the composition according to claim 1 for cleaning up skin being contaminated with MRSA, comprising applying said composition to skin contaminated with MRSA.

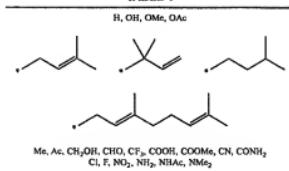
Claim 27. (currently amended) **Method A** method of using the composition according to claim 1 for skin care after decolonization by means of bactericidal agents, comprising applying said composition to skin which has been subjected to bactericidal agents that have effected decolonization of bacteria on said skin.

Claim 28. (currently amended) **Method A** method of using the composition according to claim 1 comprising applying said composition to skin or tissues wherein said microparticles-ornanoparticles particles further comprise xanthone derivatives of the formula



wherein R<sup>1</sup> - R<sup>8</sup> can be are selected from the following substituents listed in table 1 below:

TABLE I



Claim 29. (currently amended) Method A method of using the composition according to claim 1, comprising applying said composition to skin or tissue, wherein said microparticles-ornanoparticles particles further comprise a vitamin.

Claim 30. (currently amended) Method according to The method of claim 16, wherein said active substances comprise antibiotics.

Claim 31. (currently amended) Method A method of using the composition according to claim 1 comprising applying said composition to obtain a dosed release of antimicrobial active substances contained in said microparticles-ornanoparticles particles and to obtain simultaneous immunostimulation.

Claim 32. (currently amended) Method A method of using the composition according to claim 1, comprising applying said composition to areas adjacent an implant so as to provide slow-release of active ingredients and prevent implant-associated infections.

Claim 33. (currently amended) Method A method of using the composition according to claim 1, comprising applying said composition so as to stimulate leucocytes or so as to activate the reticuloendothelial system.

Claim 34. (currently amended) Method A method of using the composition according to claim 1, wherein impregnated into textile materials and/or or materials produced on a cellulose basis or as covering materials for wound treatment.

Claim 35. (currently amended) The composition according to claim 1, wherein said microparticles or nanoparticles are in a form of oils, sprays or ointments.

Claim 36. (currently amended) Method A method of using the composition according to claim 1, comprising applying said composition so as to obtain acceleration of cell growth.

Claim 37. (currently amended) Method A method of using the composition according to claim 1, comprising applying said composition so as to effect the goal-directed substitution of deficiency syndromes.

Claim 38. (currently amended) Composition according to The composition of claim 1, wherein said biomasses are biomasses of lipid-containing microalgae, macroalgae, cyanobacteria, or marine bacteria.

Claim 39. (currently amended) Composition according to The composition of claim 1, wherein said biomasses are biomasses of lipid-containing microalgae, macroalgae, or marine bacteria.

Claim 40. (currently amended) Composition according to The composition of claim 4, wherein said one or more mineral substances and/or or radical scavengers and/or or dietary supplements and/or or vitamins comprises vitamin C.

Claim 41. (currently amended) Composition according to The composition of claim 5, wherein said one or more clay minerals phyllosilicates comprises bentonite with a diameter < 2  $\mu$ m.

Claim 42. (currently amended) Composition according to The composition of claim 9, wherein

- a) said cyanobacteria from the class Oscillatoriaceae comprises at least one strain selected from the group consisting of: SPH 03, SPH 04, SPH 05, SPH 06, SPH 09, SPH 10, SPH 11, SPH 12, SPH 13, SPH 14, SPH 20, SPH 21, SPH 22, SPH 23, SPH 25, SPH 26, SPH 29, SPH 32, SPH 34, and SPH 37 and/or or

- b) said cyanobacteria from the class Nostocales comprises at least one strain selected from the group consisting of: SPH 18, SPH 20, SPH 27, SPH 28, and SPH 38 and/or or
- c) said cyanobacteria from the class Chroococcales comprises at least one strain selected from the group consisting of: SPH 07a, SPH 07b, SPH 08, SPH 14, SPH 16, SPH 17, SPH 24, SPH 33, SPH 36, SPH 39, SPH 40, and SPH 43.

Claim 43. (currently amended) Composition according to The composition of claim 10, wherein said lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria are cultivated in the presence of clay minerals.

Claim 44. (currently amended) Composition according to The composition of claim 6, wherein said active substances comprise inorganic thiocyanates and/or or hydrothiocyanates of organic bases and/or or trihydroxybenzaldehyde, or its derivatives and/or or DNA.

Claim 45. (currently amended) Method according to The method of claim 25, wherein said multiresistant *Staphylococcus aureus* strains comprise strains of methicilline-resistant strains of *Staphylococcus aureus* (**MRSA**).

Claim 46. (currently amended) Method according to The method of claim 29, wherein said vitamin is vitamin C.

Claim 47. (currently amended) Method according to The method of claim 13, wherein heating of the microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria and of the surfactant-water mixture does not take place.

Claim 48. (currently amended) Composition according to The composition of claim 9, wherein

- a) said cyanobacteria from the class Oscillatoriaceae comprises at least one strain selected from the group consisting of: SPH 04, SPH 05, SPH 06, SPH 09, SPH 10, SPH 11, SPH 12, SPH 13, SPH 14, SPH 20, SPH 21, SPH 23, SPH 25, SPH 26, SPH 29, SPH 32, SPH 34, and SPH 37 and/or or

- b) said cyanobacteria from the class Nostocales comprises at least one strain selected from the group consisting of: SPH 18, SPH 20, SPH 27, SPH 28, and SPH 38 and/or or
- c) said cyanobacteria from the class Chroococcales comprises at least one strain selected from the group consisting of: SPH 07a, SPH 07b, SPH 08, SPH 14, SPH 16, SPH 17, SPH 24, SPH 33, SPH 36, SPH 39, SPH 40, and SPH 43.

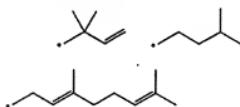
Claim 49. (currently amended) Composition according to The composition of claim 9, wherein said lipid-containing microalgae, macroalgae, marine fungi, cyanobacteria, or marine bacteria comprise

cyanobacteria from the class Stigonematales and/or or macroalgae from the genera Asparagopsis, Cystoseira, Codium, Dictyota, Dictyopteris, Enteromorpha, Fucus, Gelidium, Gracilaria, Gracilaria, Gracilaria, Halopteris, Hypoglossum, Laurencia, Plocamium, Polyneura, Sargassum, Solieria, and/or or Ulva and/or or hraustochytrids from the genera Schizochytrium and/or or Thraustochytrium and/or or Marine bacteria from the genera Photobacterium, Shewanella and/or or Colwellia.

Claim 50. (currently amended) Method according to The method of claim 28, wherein R1-R8 can be is selected from the following substituents listed in table 1 below:

TABLE I

H, OH, OMe, OAc



Me, Ac, CH<sub>2</sub>OH, CHO, CF<sub>3</sub>, COOH, COOME, CN, CONH<sub>2</sub>, Cl, F, NO<sub>2</sub>, NH<sub>2</sub>, NHAc, NMe<sub>2</sub>